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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-09/149e/CUBE/2016-17 13.10.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* **Customer**	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* **Agency**	: **Technical Manager (West),** KRIDL, Bangalore.
* **Name of the work**	: Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.
* **Reference**	: BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016
* **Sample ID**	: Coping Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
* **Grade of Concrete**	: M_{15}
Compressive Strength as on	: 28th day
Sample Received on	: 13.10.2016

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Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	15.09.2016	13.10.2016	8.125	369.9	16.44
2	15.09.2016	13.10.2016	8.239	388.5	17.27
3	15.09.2016	13.10.2016	8.322	416.3	18.50

* Information is furnished by the Customer/Representative

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VIDYARANI P.K.
Technical Manager

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T-2377

Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-09/149e/C.C.Core/2016-17 26.09.2016

TEST REPORT ON CONCRETE CORE

* Name of Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Name of Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.
* Reference		BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Precast slab
Sample Received on	:	23.09.2016
Date of Testing	:	26.09.2016

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Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	82.00	0.403	2503.00	1.64	0.961	32.60	16.60	17.93	18.66	23.32
2	50.00	83.00	0.409	2509.66	1.66	0.963	33.50	17.06	18.43	17.75	22.19
3	50.00	84.00	0.415	2516.16	1.68	0.965	32.50	16.55	17.88	17.26	21.57

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Job No.: CTCE/BBMP/W.No.14/KRIDL/GSB-I/GR/2016-17 Date : 03.10.2016

GRADATION FOR GSB(Coarse Graded-1)
IS : 2720 (Part - 4)

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016

Date of Testing : 03.10.2016

Sample Source : Mix Plant Bangalore. **Oven Dry Wt (gm) :** 5000

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TABLE – 1

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75	-	-	-	100	100
26.5	1645	1645	32.90	67.10	55-75
4.75	1960	3605	72.10	27.90	10-30
0.075	1015	4620	92.40	7.60	<10
PAN	380				
Total	5000				

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Remarks: Satisfies MORTH Specifications as per Table 400-2, Grading I

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Job No.: CTCE/BBMP/W.No.14/KRIDL/GSB-I/AL/2016-17 Date : 03.10.2016

ATTERBERG LIMITS TEST FOR GSB (COARSE GRADED)
IS : 2720 (Part - 5)

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016

Date of Testing : 03.10.2016

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As per MORTH Table : 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	24.50	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/Gradation/2016-17 : 07.10.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.

Reference : BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016

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Date of Testing : 07.10.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **5000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	45	45	0.9	99.1	95-100
22.4	1585	1630	32.6	67.4	60-80
11.2	890	2520	50.4	49.6	40-60
4.75	850	3370	67.4	32.6	25-40
2.36	665	4035	80.7	19.3	15-30
0.600	490	4525	90.5	9.5	8-22
0.075	385	4910	98.2	1.8	0-8

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Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/AIV/2016-17 07.10.2016

Aggregate Impact Value

IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.
Reference	BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	07.10.2016

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	378	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	301	
4	Aggregate Impact value = percent fines	20.63	20.79	
	100* (W_2/W_1)%			**20.71**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/S-T/2016-17 07.10.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of Work	Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.
Reference	BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	07.10.2016

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Result : Flakiness Index = **12.35%**

Elongation Index = **13.90%**

Result : Combined Flakiness & Elongation index 26.25%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-09/149e/QB(BC)/2016-17 17.10.2016

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

*CUSTOMER	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
*NAME OF THE WORK	:	Improvements to Roads and drain at Karekallu, Vinayakanagar in Ward No.14, T. Dasarahalli Sub Division, BBMP, Bangalore.
REFERENCE	:	BBMP/EE/DD/WO/48/2016-17 Dated: 29.07.2016
*SAMPLE ID	:	Bitumen
DATE OF SAMPLING	:	15.10.2016
DATE OF TESTING	:	17.10.2016

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The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	66	60 to 70
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	47	Min. 45
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	302	Min. 220

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